

Paper March 10th

1824

W. L. H

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On
Cinchona

in

Intermittent Fever

by

George A. Eckert

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Pennsylvania 1823.

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Cinchona

Before entering upon the consideration of Cinchona as a medicinal article, in intermittent fever, I propose, briefly, to give a sketch of its natural history, and of its mode of introduction into regular practice.

The tree which affords this invaluable article of the materia medica, is a native of Peru. Notwithstanding the diligent researches of botanists, the history of this important genus seems yet to be involved in some considerable perplexity. Not less than about thirty different species have been described by authors. Though the different varieties of bark which now occur in commerce, are chiefly assorted into three kinds, viz: the pale, the red, and the yellow. — Or in technical language, Cinchona lancifolia — oblongifolia — and cordifolia.

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The knowledge of the properties of bark, was originally acquired by accident. An Indian being seized with a violent paroxysm of fever, and finding no other water to quench his thirst, was forced to drink out of a pool, strongly impregnated with the bark from some trees having fallen into it, by which he was cured. Also is the mode of its introduction into the modern medicine very curious. It is related, that the lady of the vicery of Peru, whose name was Cinchen, was affected with a tertian intermittent of a very intractable nature. She was advised by the governor of Lima, who had been made acquainted with the febrifuge power of the bark, to use it as a remedy in her disease. She took it, and was soon relieved. The cure of this case diffused its fame throughout Spain, when it came into general use. To commemorate this incident, Peruvians, in a spirit of gallantry, conferred the title of Cinchona on the medicine.

About the year 1649 the bark was carried to Italy by the Jesuits, when it was gratuitously distributed among the indigent sick at Rome, by Cardinal de Lago, and his physician, Sebastian Baldo, to the latter of whom is due the credit of

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having written the first work on the valuable article. Its fame
was rapidly extended throughout France, Germany, England
&c; and although opposed on all sides, the value of its
powers was finally established by the testimony of universal
experience.

A variety of prejudices respecting the bark prevailed for
a long time after its introduction into Europe; the most ancient
of which do not even deserve to be noticed; such as, that those
who use the medicine, will die within a year; or, according
to others, in seven years; that it was particularly pernicious
to fat persons; that it strikes into the bones; and that it
is often followed by obstructions of the viscera, &c. &c.
Happily such fantastic and ill-founded objections no longer
invalidate the merits of the article, at least in medical
opinion. Yet this preposterous notion is cherished even at
the present day, by the vulgar of some parts of our Country,
so that it materially interferes with the proper adminis-
tration of the medicine. Cases of this description have come
under my own observation.

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Barb, as already observed, was originally employed in the cure of intermittent fever, a disease, in which, it had maintained an unrivalled reputation. At one time it was even considered a specific in this disease; and to adduce any additional, ^{and not} of its superior efficacy, would now, indeed, be altogether superfluous.

Notwithstanding all practitioners are agreed as to the utility of the medicine, in agreed, still that unanimity of sentiment is not perfect, as respects the period of the disease at which it ought to be exhibited; — the proper form of its administration; — and the utility, or inutility, of a previous resort to evacuant remedies. — To determine when, and in what manner the barb should be given, and also the necessity of premitting evacuations, I will, for the sake of perspicuity, divide the consideration of the subject into the following heads, and treat of these, in their proper order.

1. The period of the disease proper for its administration.
2. The nature of the symptoms, with the age and

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3. The climate, season of the year and nature of the Epidemic.

4. The form of administering the bark.

To avoid repetition, I will not confine the consideration of servants under any particular division.

First. — The period of the disease proper for its administration. — As before observed, considerably differently of opinion has been expressed upon this subject. Epidemic was that was intermit, and indeed so indignant to exert most of its antiseptic power. The mode of oblong of bark, can can and drop it over the cancer, in which the dose, in nature was a dose, repeated morning & night on the intermit, at, or well days, until the whole was taken. The same quantity was repeated three, interposing a fortnight between each. Helvidius gave as much as four ounces immediately before the accession of the paroxysm; and Dr Clark, Wierow and others, recommended it during the hot stage, it is also stated that among the early notions in this point

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was the absurd one, that, in an intermittent some time should be allowed to elapse before the bark was exhibited, in order that morbid matter may be thrown off by the paroxysms.

While such paradoxical notions as these regulated the administration of the bark, we cannot be surprised that it was not found more successful.

The proper time to exhibit the bark is undoubtedly during the apyrexia or intermission, and upon this point practitioners are now, I believe, unanimously agreed. But there can still be some discrepancy as to the particular period, & the quantity at which it should be given in the largest quantity.

Cullen is decidedly in favour of giving it in pretty large doses just before the accession of the paroxysm; and I suspect in the other hand, asserts that the bark should be given at as great an interval of time as possible from the next expected paroxysm. Dr A. Philippe Médecin, in his excellent work on malarial diseases observes "When the apyrexia is short and the quantity of the bark required considerable, it must be given immediately after the paroxysm, and continued till

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the return of the succeeding pit, at times is strikingly evident, and the case is more or less violent and the stomach able to bear it. On the other hand when the oppression is long, especially when a great quantity of bile is not necessary, its exhibition should be delayed till within six or eight hours of the time at which the paroxysm is expected. Then, a considerable quantity given at this period is more likely to succeed, than the same quantity in smaller doses throughout the whole of a long oppression. In the case I intermittently continued this medicine occasionally in the stomach and bowels, and that on this account our entire constitution be disturbed, to have a proper quantity of bile in the prime, viz. at the time the paroxysm is expected.

To prevent the recurrence of the paroxysms, is our great object, it is manifest, that we should begin the administration of the bark (provided no counter-indications be present) as soon as suffering in the antecedent, to ensure us that the system will be better under its influence at the time the fit is anticipated. The early exhibition of the bark in the oppression, is the more essentially necessary, when we consider its operation

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on the system. There are few sensible effects displayed, except those of pain, and with the patient, at a time, and almost immediately in its operation, and, in the elements, produce in sudden shivering in the lower extremities, the functions of the animal economy. The antipyretic power therefore, which it possesses, is an error, and is dependent on the recurrence of the fever, and thus effecting a removal of the disease.

With a view to avail ourselves of every advantage, I have been the practice to exhibit the birds in the beginning to the view of the species or varieties unknown and afterwards reported as the same as the first seen. This we have done in the two last times reported upon on other birds. We now come to the next section of the next division.

Secondly. - The nature of the symptoms with the
and kind of the patient. Which required to be attended
to. The kind is the ordinary case of colic without the little
must be said. The propriety of evacuating the stomach and bowels
is now fully established, and although doubted by some, yet several
experiences is decidedly in favour of practice. There wants no

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doubt, that many cases may be effectually cured by the bark without any
preparation, or a natural cathartic. This is more especially the case in
those instances which occur in spring, or winter in subjects who have
had the disease in the preceding autumn; and which may therefore
be considered as relapses from the former attacks. But in intermit-
tents occurring in summer and autumn, in malarious districts,
and where the biliary secretions are much decreased, emetics and pur-
gatives are strongly demanded; and every practitioner should be
on their alertness. Besides the salutary effects which can-
nars produce on the general system they promote the motility of the
biliary canal, especially of the stomach and first
2. ³ Colloidal arsenic is a note to (colloidal arsenic) distillate
given that occasionally such adjuvant matters as might interfere be-
tween the bark and its internal surface thus promoting for that ar-
ticle a more immediate acceptance, without cost, and thereby add
to the efficacy of its action. In extreme cases of intermittents,
nothing else is required preliminary to the eruption of the bark.

However, cases frequently occur, which, from the nature
of their symptoms require additional matters before the bark

[illegible]

can be administered with advantage. When the case is of an infla-
matory char. the antiphlogistic action of our next remedy is ef-
ficiently resisted. Dr. Ferrius observes Dr. Clark in his materials and
case is an essential testimony in some cases of intermittent in-
flaming the back. I have had many cases of this kind in my own
practice. The tendency to inflammation when it sometimes oc-
curs that the fever has not power to develop itself so as to remove the
the inflammation is an insidious attack as it settles itself in an
irritated state of the back, the cold stage is not marked by those
signs but only by creeping and protruded chill, and the hot stage
does not go off by a profuse and universal perspiration. In such
cases the back can seldom be employed with any great advantage
and is char. hindered by restriction and other accidents. The con-
quest of blisters and cathartics, in such cases of this kind the fire will
never appear its genuine character it is not so violent as when
the perspiration which precedes the hot stage, copious and gen-
eral. The back will never be heated with however ineffectually
it may have been previously employed.

It has been recommended by some, to delay the use of the back-

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until the inflammation subsides of the system has been overcome by
the continuance of the diet. This notwithstanding, there will have
to be some, to prevent the case, and perhaps, often to attract with
the second conversation. The one will be delayed until by the oppor-
tune measures we have suggested that state of the system, which
precludes the earlier employment.

The general plan is indeterminate, and something more is
not to give the back until a complete improvement is complete
of the complaint has taken place. But, should the case present
a slight tendency, such restrictions will result, as we are the
first to consider the matter. Some, or not, will be more decided and
stimulating, without delay, as for a perfect solution of the patient.
Dr. Wilson, whom I have already quoted, remarks when the
debility is great, the symptoms consequently alarming, and not
at all apprehensive of the fever again recur, especially when the only
remedy is not an imperfect, it is often advisable to leave to give
the back about the end of the first febrile period, and to try until
the remission takes place, it might be impossible to choose, in a
sufficient quantity before the succeeding fever, &c. And if the

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discomfort, much distress and the vomiting, &c. & continued
have made the appearance the back of the face after the vomit
sometimes brown & the skin red, the face, the forehead.

Several cases of Dr. J. A. Smith's treatment have been reported
in Dr. Smith's Medical Library in London. In these, a woman
is suffering in the pelvis, & the skin is red, & the skin is red
appearance of a reaction and continues to double the volume
of the paragon, which is given for a time to the same of the
and that, with appropriate assistance, had the patient been
given of the same.

It would even appear that vom-
iting and purging should not prevent one giving the back in some
cases. After speaking of the propriety of delaying the use of the
back in some cases, until after the operation of the emetic is over.
In the author's first mentioned case, that "in urgent cases, and
when the medicinal illumination, & the back ought not to
be delayed on the account of the state of the stomach and bow-
els." & this is even proved from the observations of Dr. Jackson.
Dr. Donald's observations, & others, that actual vomiting and pu-
ring should not induce one to delay the exhibition of the back

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when the state of the fever requires it. Long, in most instances,
I was of this opinion, that the best method of treating the
stomach, and in some cases passing off, should instantly be
stated, yet the course of the fever seems to be a little off to the
right, but is it then when we first apply to the stomach? In what
cases? 22. I shall then proceed, when it was necessary to
give the best before mentioned method could be a remedy.
If, for example, it is very well, and the patient is not that of a
cathartic, but, not prevent the back giving the same? 23.

If a patient is vomiting, and purging, occurs, in left urgent
cases, the proper treatment is to prevent these motions, by stimulents,
until the prime vis are sufficiently freed from this condition,
and then compose the system by opiate, before we return
into the back.

Intermittent fever is sometimes associated with visceral
disturbances, and then the back has been held inadvisable by
some. If the disturbance be limited to those cases in which the dist.
is considerably inflammatory, will give in the dist. and
viscous it is not unbounded, but a visceral rule it can not be admitted.

1. and written in pencil 1821.

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"The question has several times occurred to me," says Dr. Cullen, "in the case of persons, who, having for a considerable time been afflicted with bad humours and indistinct reasoning in the head, and, who, when in that condition, were subject to intermittent fever. I have observed in them but very little heat, and never found it to increase the affection of the liver and spleen: and in other dark cases I have repeatedly found that the action of the liver, and sometimes likewise of the spleen, is the power, and I might almost say the sole power, of the fever."

The more we feel that materiality, in turn, is our first, in the
 case of the back. Patients, that are cured, and extend that
 into two examinations much more easily and receive little gain.
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absorption were attacked by Dr. Parrish in his last volume. The
outlet of the system was not prevented from an
attack of diarrhoea, before he took the purgative; and although the case
appeared mild at first, he rapidly sunk into a typhoid state, from
the most violent stimulation bestowed. He recovered
from this attack, but in the spring had not the least
return, even resorted to leeches, yet the prostration was again
considerable. In the succeeding autumn he had another relapse,
but now only a little rhubarb was used, and this was imme-
diately followed by the back, serpenteria, without any other
preparation or measure. Thus in the next case, the same
was presented in the attack, sinking into that state,
which characterized the two former attacks.

Thirdly. The climate, season of the year, and
nature of the epidemic. — It will come to, however,
we now present associated with an interesting symptom,
and of this nature the one under consideration also partakes. The
suppling film is more, required previously to the use of the last,
and as it is, it is not so much to be apprehended, it can be

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curious, with safety, however the patient. And in warm and sunny climates, exactly the reverse is said to be the case. The lower portion of the atmosphere in the course of August, and subsequent months, is increased excitement to that extent, as to produce such. Consequently it appears although the may seem necessary, that the hygienic also attack, often prove fatal in increasing the subsequent death. On this account neither in hot climates, or in the middle, showing somewhat the least in our part.

Endemial, common in open and fertile, it is generally, allowed, admit of lower degree in the exhibition of the bark, than when prevailing in the summer and autumn. It is especially, in the case of venereal endemial, that the phlogistic death occurs. Dr. Cullen, and therefore that upon the same other considerations the exhibition of the bark is then, may be more easily delayed; but even in these it may often be exhibited very early.

The manner of treatment is sometimes materially influenced by the nature of the epidemic. This was strikingly shown in the epidemic that used to prevail during the last season in this city and its vicinity. It was not uncommon to

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in them taking on the character of dyscrasy, and sometimes
all sorts of humors in their progress. From cause it is pro-
duced for determination to the head, or lungs &c? producing all
the symptoms & inflammation of those organs, and until they
relieve the one, the last is perpetuated. However the
first affection not mentioned did not so much interfere
with the inflammation of the liver as we might suppose, either;
for I observed some cases when it was joined with little more
than the described complaint. This was especially the practice
when it was presented a typhoid condition.

Fourthly. — The form of jaundice being the liver
or biliary system absent, almost the only species now employed in
this matter on the part, the rest and the system, does but
to diminish and leave the rest is superior to either of the two other
species and a biliary production generally, as we see in the
branches of the statement.

Such is presented as
a result of some. Besides the substance, it is given in the
liver, therefore, decision and opinion, but when the demand
with the substance we ought not to have recourse to the

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other mentioned forms. However, in some cases, from the irritability and the nausea which it excites, the powder can not be retained and under such circumstances even such other preparations are substituted with advantage. But, of all the medicinal preparations, none, perhaps is better adapted or more efficacious, than the sulphate of quinine. It was first used in the Parisian hospitals in obstinate intermittents, in doses of four grains morning and evening, and it is habitually of great success. Dr. Hare & Henry the vendor at New Orleans first prepared it in this city, & perhaps this country. Since then it has acquired much celebrity and its employment is even attended with signal success. Besides its promptness in curing a malady, the fact, also, with which it is so universally and so great recommendation. This preparation, being almost devoid of taste, and minute in its dose, will often be taken when every other form would be rejected or abused. On that account it seems to be particularly adapted to children and old delicate persons, tho' its employment is by no means confined to these. Eight grains are considered equivalent to an ounce

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of genuine bark. It is soluble in the shape of pills, or suspended in a solution of gum arabic, with a little sugar.

In the administration of the bark in substance, it will not be amiss to say a few words on the different articles which are employed. It is not unfrequently given in simple water, or coffee &c; but milk, from its concealing the taste of the bark, is preferable; and in common cases, or when we must avoid additional excitement, such articles are the best adapted. But if there be reduction of strength, the juice may be given in peck, or wine; and in patients accustomed to the use of ardent spirits, brandy is often the most appropriate vehicle. Some speak highly of lime water, as particularly increasing the power of the bark.

When the stomach is weak, aromatic and bitter are often advantageously combined with the bark. If it induces purging, we must have recourse to opiate and astringents; but if there is reason to suspect, that it is dependant on acidity, we combine it with some antacid. If, on the other hand, it occasions costiveness, it is necessary to add some gentle laxative,

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and for this purpose, rhubarb is particularly adapted.

The virtues of the bark are sometimes greatly improved by uniting with it other articles, particularly cloves, or cloves taster, or the carbonate of potash, or soda. The proportion is about a drachm to the ounce. Sassafras is often beneficially combined with it, either in substance, or what is perhaps, more common, in the form of an infusion.

When, from the resistance of children, or an insuperable irritability of the stomach, the bark can not be taken by the mouth, it has been recommended to reject it per anum, or apply it externally to the body;—for the latter, different means have been proposed. The employment in this way, is stated to have been occasionally successful. Compared, however, with the exhibition of the bark internally, it must prove an insufficient substitute; and thence the introduction of the sulphate of quinine into common practice; we will, perhaps, on but few occasions, have need to resort to these, more feeble and inconvenient means.

